

Warm Up Riddle

Mr. Brown, Mr. Green and Mr. Black were having lunch together. One of them was wearing a brown tie, one a black tie and the other a green tie. Suddenly the man wearing the green tie noticed something. He said "I just realized that we are wearing ties that match our names, but no one is wearing a tie to match his own name." How interesting! What colour tie was each man wearing?

Solving Equations by FactoringWarm Up

$0 \times 4 = 0$

$-900 \times 0 = 0$

$0 \times 7 \times 12 = 0$

$89 \times 6 \times 0 \times 123 = 0$

In general, when we multiply... if we have a zero... our answer is zero

How does that help us?????

Let's factor and solve.....

What's different about

$x^2 + 5x + 6 = 0$

$(x+2)(x+3) = 0$

$x+2=0$
 $x=0-2$
 $x=-2$

$x+3=0$
 $x=0-3$
 $x=-3$

This looks different than before...
 $= 0$

check
 $(x+2)(x+3)=0$
 $(-2+2)(-2+3)=0$
 $(0)(1)=0$
 $0=0$

example 2

$x^2 + 9x + 20 = 0$

$(x+4)(x+5) = 0$

$x+4=0$ ✓
 $x=0-4$
 $x=-4$ ✓

$x+5=0$
 $x=0-5$
 $x=-5$

Ms. Vlug - the trickster!

$x^2 + 12x - 10 = -30$

$x^2 + 12x + 20 = 0$

$(x+2)(x+10) = 0$

$x=-2$ $x=-10$

Must equal ZERO!

$6x^2 - x - 2 = 0$

M: $6x - 2 = -12$
 A: -1

$\frac{3}{6x}, -4$

$\frac{3}{6x}, -4$

$\frac{1}{2x}, -\frac{2}{3x}$

$(2x+1)(3x-2) = 0$

$2x+1=0$ $3x-2=0$
 $2x=-1$ $3x=2$
 $x=-\frac{1}{2}$ $x=\frac{2}{3}$

Questions for you to try...

1) $x^2 - 8x + 12 = 0$

2) $x^2 - 4x - 60 = 0$

3) $x^2 + 5x = 0$

$x(x+5) = 0$

$x=0$ $x=-5$

4) $x^2 - 1 = 0$

5) $x^2 - 15x + 36 = 0$

6) $2x^2 - 5x - 7 = 0$

7) $x^2 - 3x - 18 = -8$

8) $x^2 - 100 = 0$